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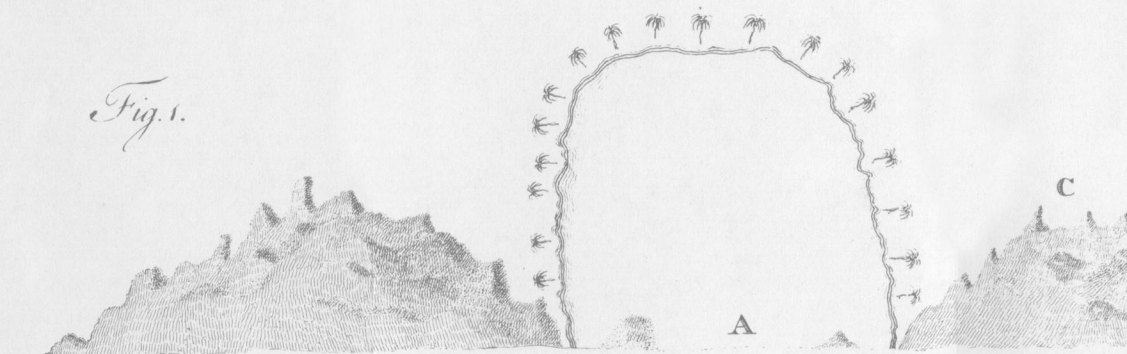
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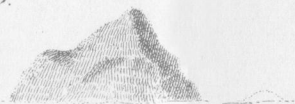
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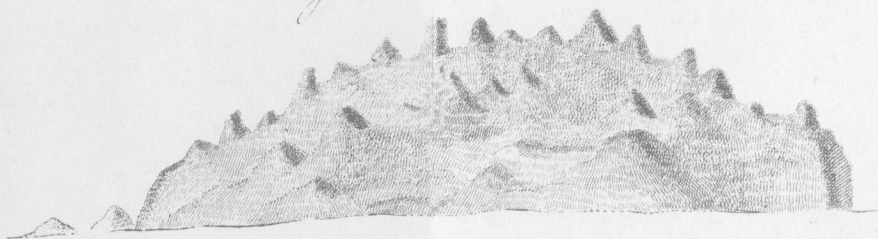
*Fig. 1.*



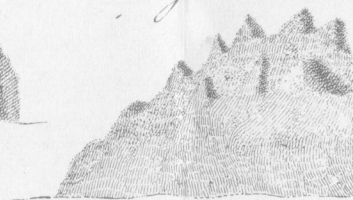
*Fig. 3.*

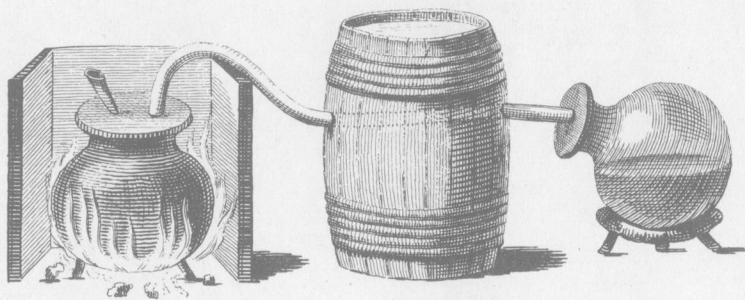
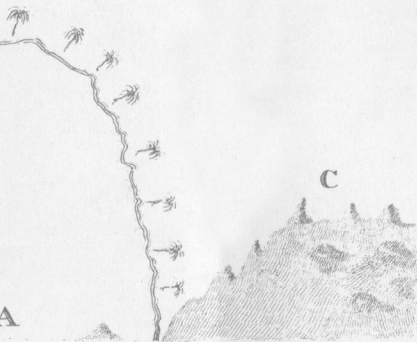


*Fig. 2.*



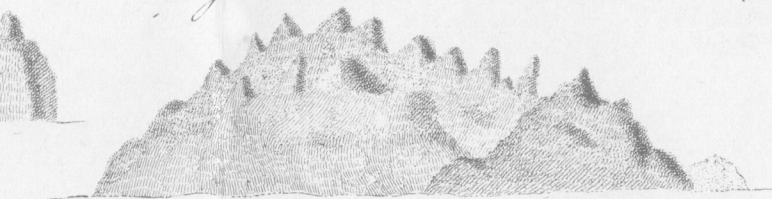
*Fig. 4.*





*Fig. 4.*

*Fig. 6*



*XII. An easy Method to distill fresh Water from Salt Water at Sea ; by Capt. Newland.*

Read March 12, 1772. **T**HE materials necessary for this process are the following ; a copper or iron pot of 15 or 20 gallons, an empty cask, some sheet lead, a small jar, a few wood-ashes or soap, and billet-wood for fuel. See Tab. V. fig. 6. where A is the still or pot ; B the pipe or worm ; C the worm-tub ; D the receiver ; EE the fagong or fire-place ; and f the plug-hole to put in water.

FIRST, In order to make my pipe or worm B, I took as much sheet lead as I thought was sufficient for the purpose, and beat it on a sponge staff to make it round : this being done, I was somewhat at a loss for solder ; however, I supplied that deficiency with good paste and dungerec (or thin canvas) laid well on, and over that, a second coat of paste and dungerec, and then a covering of small cored line hove close together and very tight round, over which I put my third coat of paste and dungerec, which I found, to my great satisfaction, was sufficient to keep it from blowing. The next thing was to fix my pipe B in the pot or still head A. When I had well secured the pot in the fagong EE. I filled it about two thirds full of salt water (about 15 gallons), with which I mixt two or three double handfulls of wood-ashes, and stirred it well together, in order to soften the salt water ; I then fixt the lid (which was  
made

made of plank 3 inches thick) in which there are two holes, one for the end of the pipe, the other to put in water as occasion requires, without taking off the lid. It must be well observed, that the end of the pipe is not put more than 2 or 3 inches within the still head; for, should it be put too far in, when the water boils, the bubbles or saline particles get into the end of the pipe, and make the water brackish in the receiver D. To prevent the steam from coming out at the plug-hole *f* or lid A, I made a kind of mortar, with wood-ashes, salt water, and rope cut very small and beat well together, and then applied it thereto, which answered my purpose extremely well. Now my pipe is fixt in the still-head, I shall proceed in the next place to carry it through the worm tub C into the receiver D. My worm-tub is nothing more than an empty cask with one of the heads taken out, and in each side a round hole cut, of about 3 inches diameter, for the pipe B to pass through into the receiver D, which is fixt at a little distance from the tub C. The receiver has also a wooden lid like that of the still-head, with a hole in it for the end of the worm to go through into the receiver D; care must be taken, that no steam comes out there, as well as at the still-head. An empty jar will answer the purpose of a receiver very well. Notwithstanding the pipe B passes through the tub C of cold water, your jar will be very hot; I therefore thought it necessary to keep a person continually wetting it with cold water, which not only kept the jar from breaking, but made the fresh water cold and fit for use immediately after the still was

taken off. The foregoing directions strictly observed, a quantity of 8 or 10 gallons will be produced every day, each day containing 12 hours.

Note. Every five or six hours you must replenish the still with about five gallons of water, as I found my first stock consumed about a gallon per hour by boiling.